

Chapter 6 Sample Problems (Answers)

Please report any errors.

1. 29
2. 63273600
3. (a) 512
(b) 336
(c) 0
4. 50388 and 3427615885824.
5. (a) Count (in two different ways) that in how many ways you could choose r lucky people from a group of n people and give a free tickets to k of the lucky people.
6. Use the pigeonhole principle.
7. (a) 1820
(b) 495
8. Different answers are possible,
9. $2^{100} - 1 - 100 - 4950$
10. 126
11. Since the order of a 2-pair is not important, the given answer needs to be divided by 2.
12. (a) 324632
(b) 119700
- 13.
14. (a) 561
(b) 66
- 15.
16. 2520
17. (a) $x^{14} + 7x^{11} + 21x^8 + 35x^5 + 35x^2 + 21x^{-1} + 7x^{-4} + x^{-7}$
(b) Use the binomial theorem for $(x + y)^{50}$ with $x = 1$ and $y = -1$.
18. 611